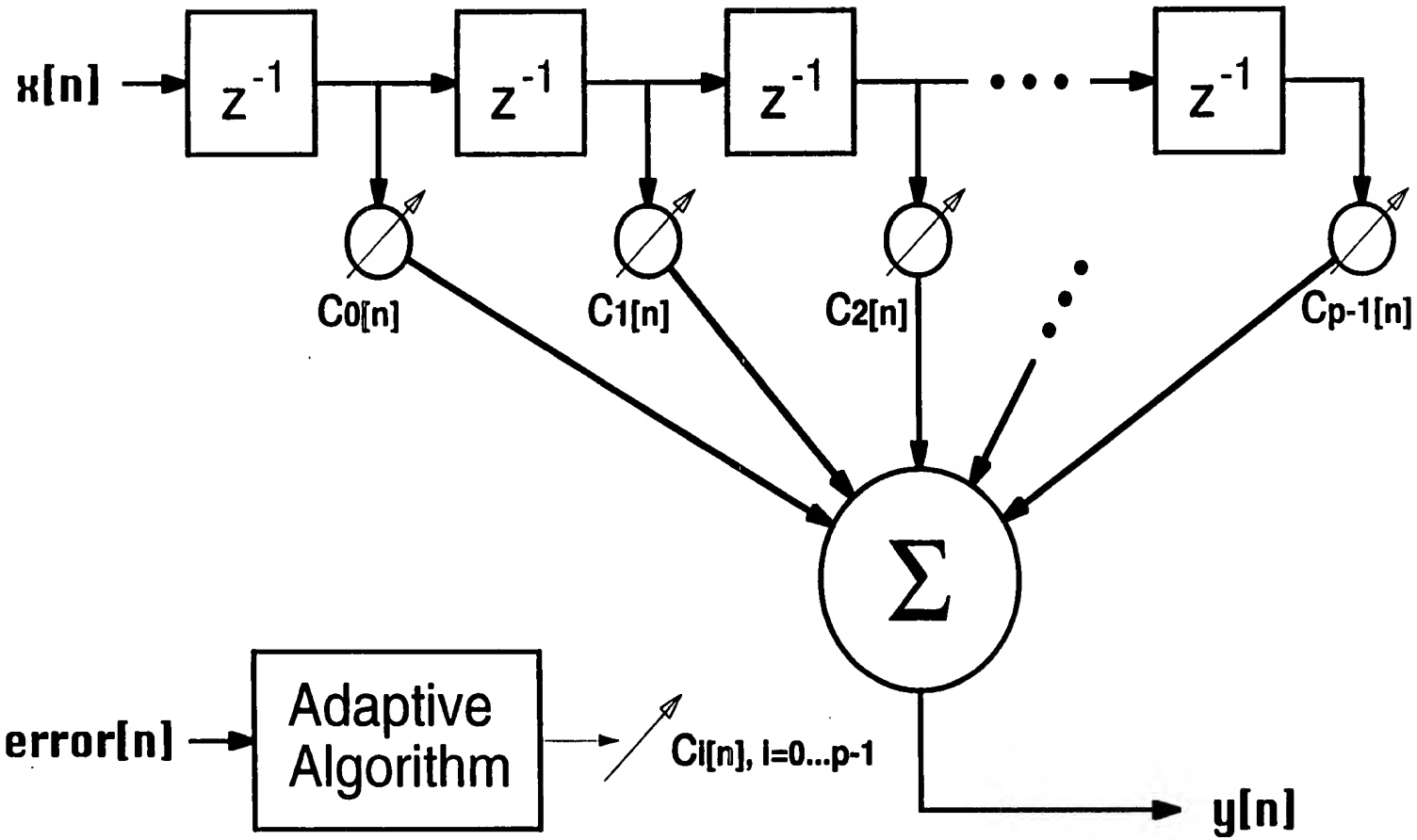
Figure 1a

Basic Adaptive FIR Filter Structure



003760 99659960

Figure 1b

Echo Canceller Using an Adaptive FIR Filter

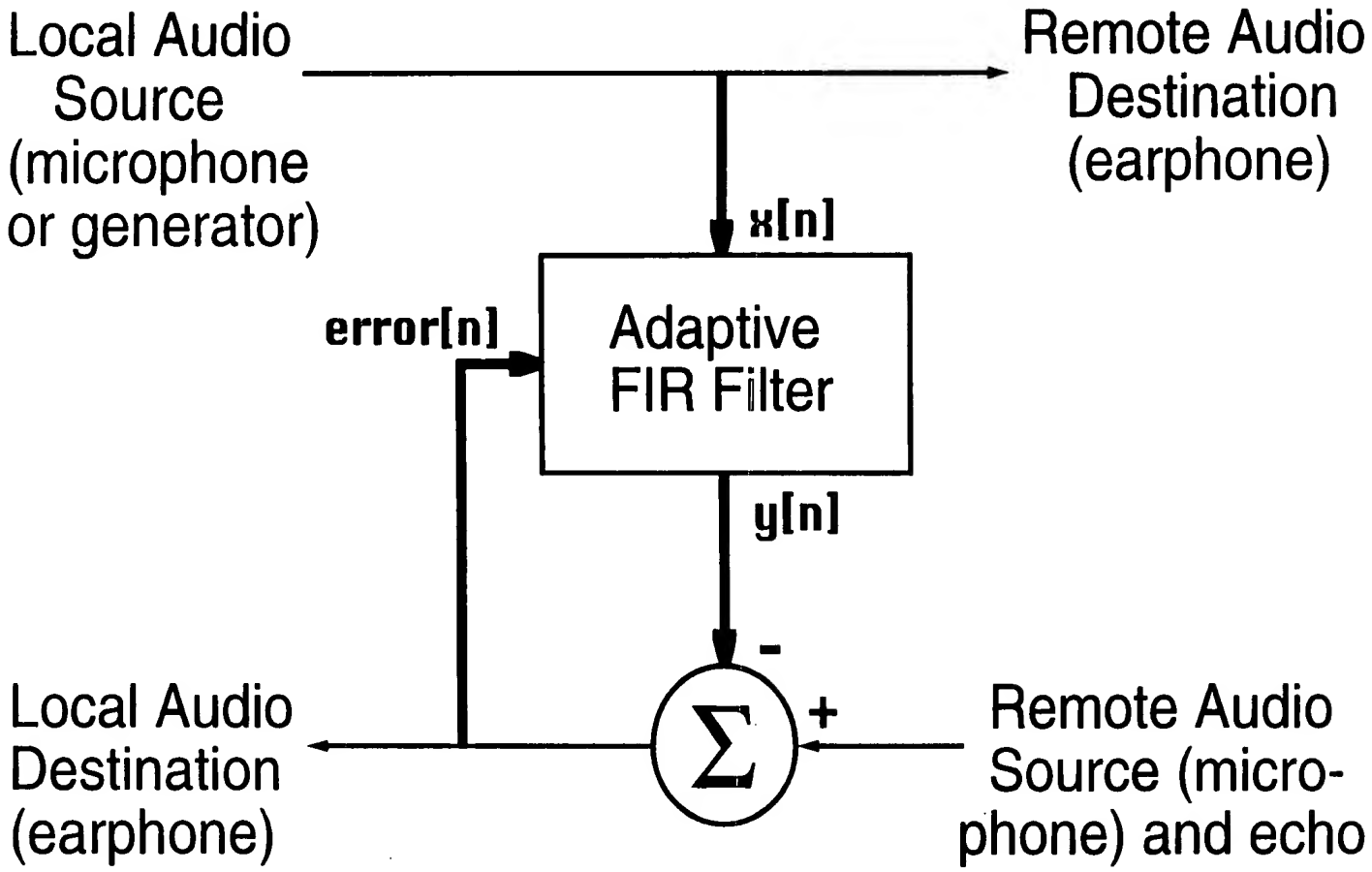


Figure 2

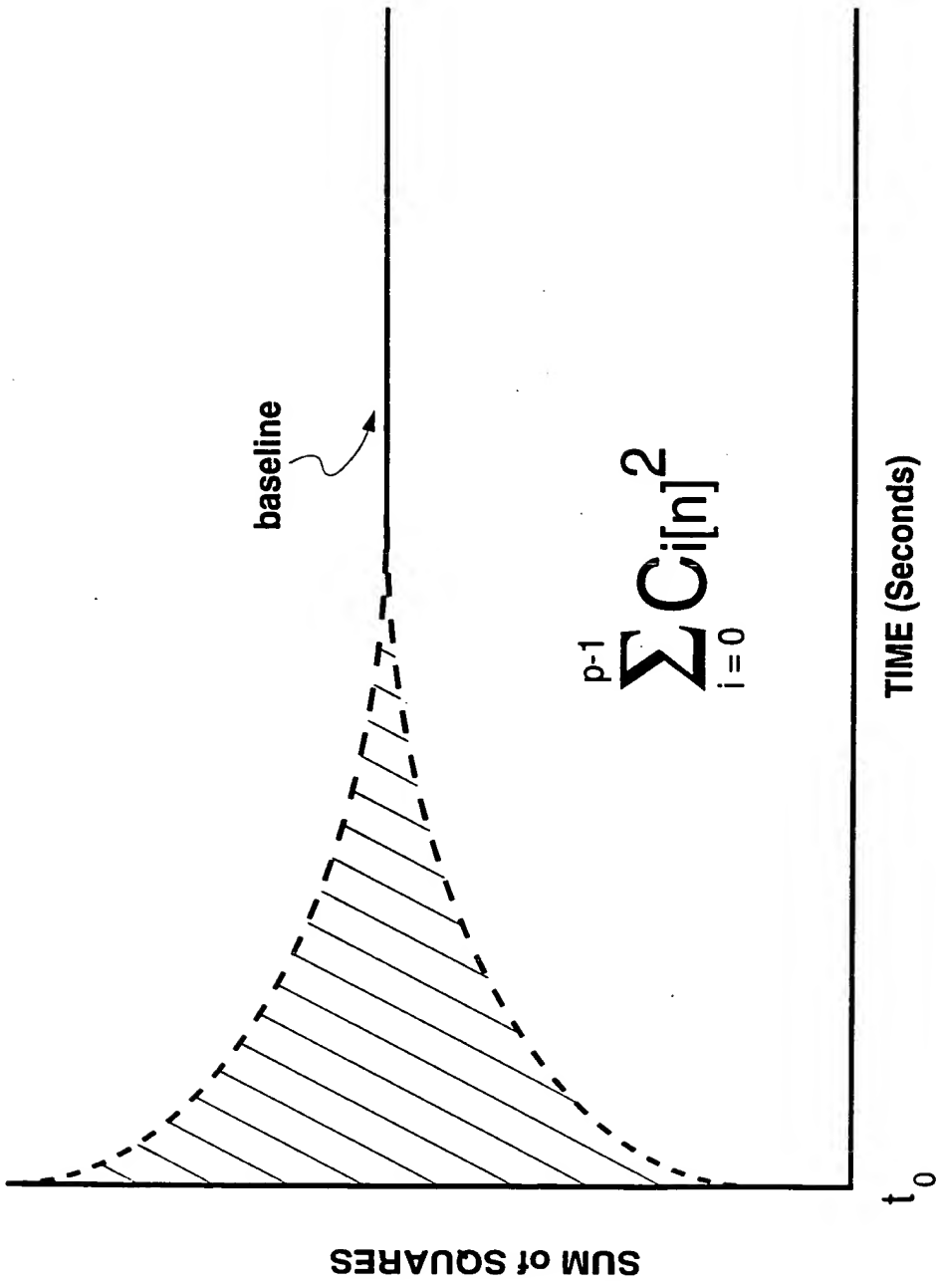

ADAPTIVE FIR FILTER ATTAINING STEADY STATE
baseline
$\sum_{i=0}^{p-1} Ci[n]^2$
SUM of SQUARES
TIME (Seconds)
t_0

Figure 2A

TYPICAL THREE-WAY FILTER RESPONSE

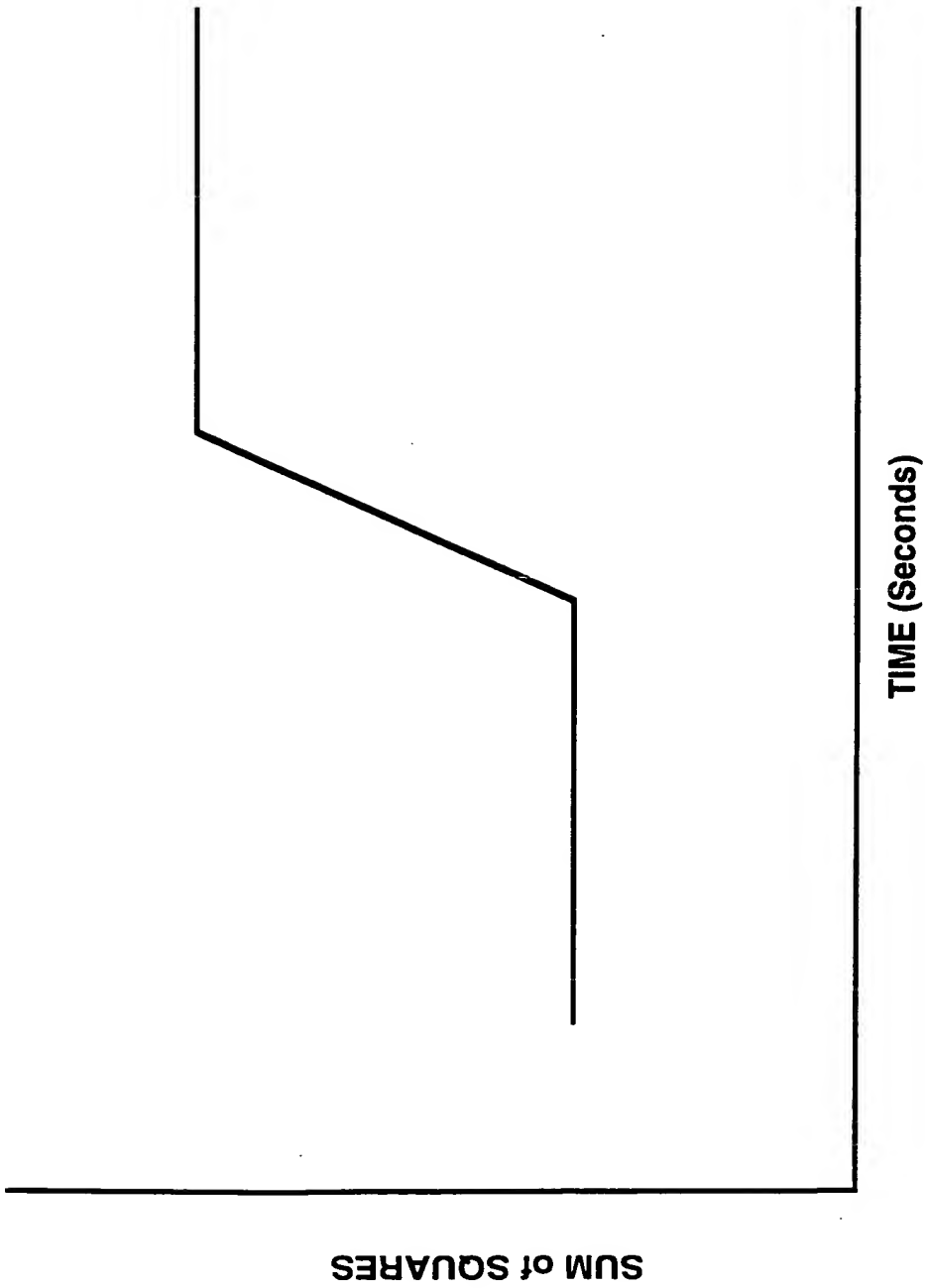


Figure 2B

TYPICAL FILTER RESPONSE WHEN CALLED PARTY IGNORES CALL WAITING NOTIFICATION

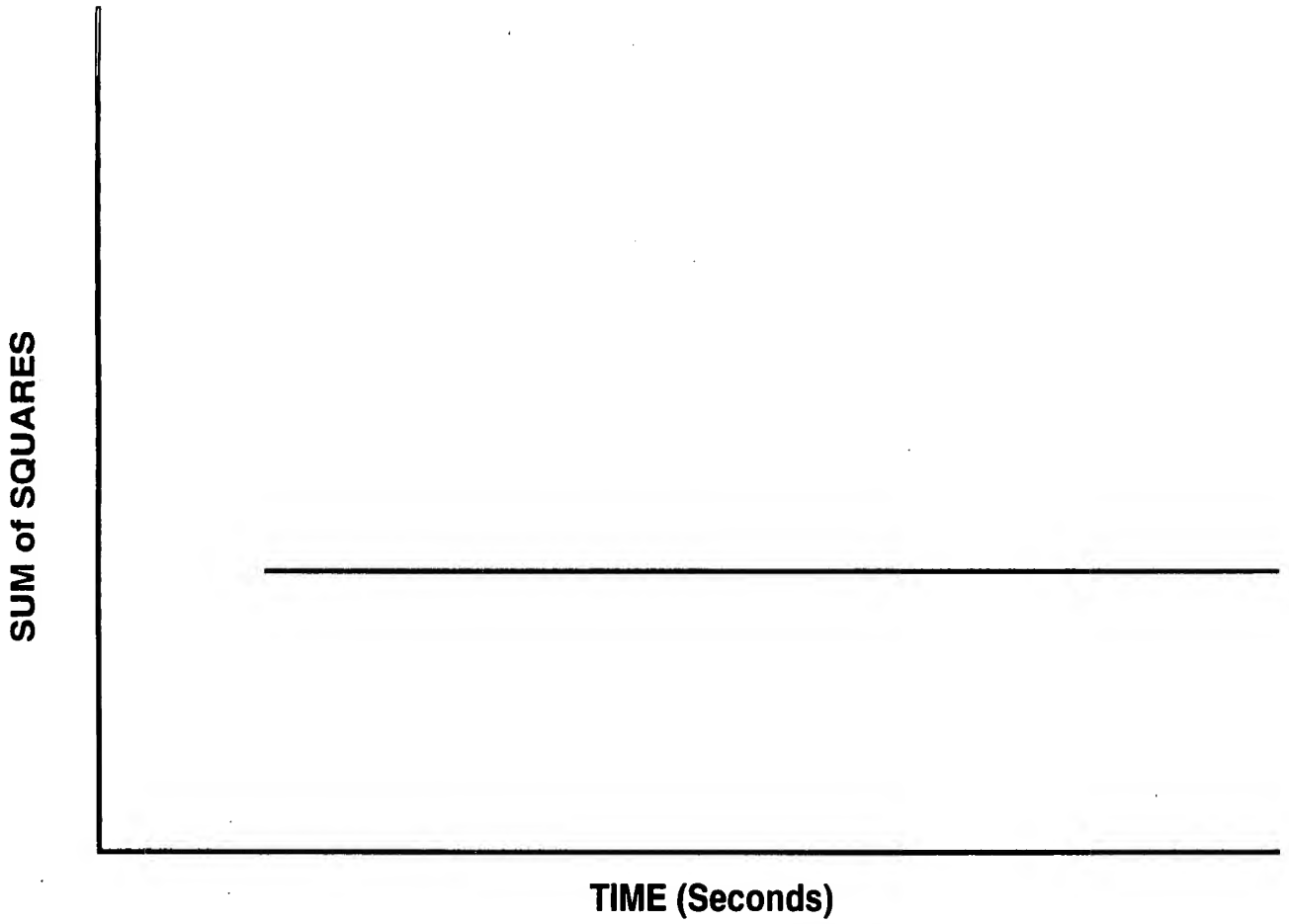


Figure 2C

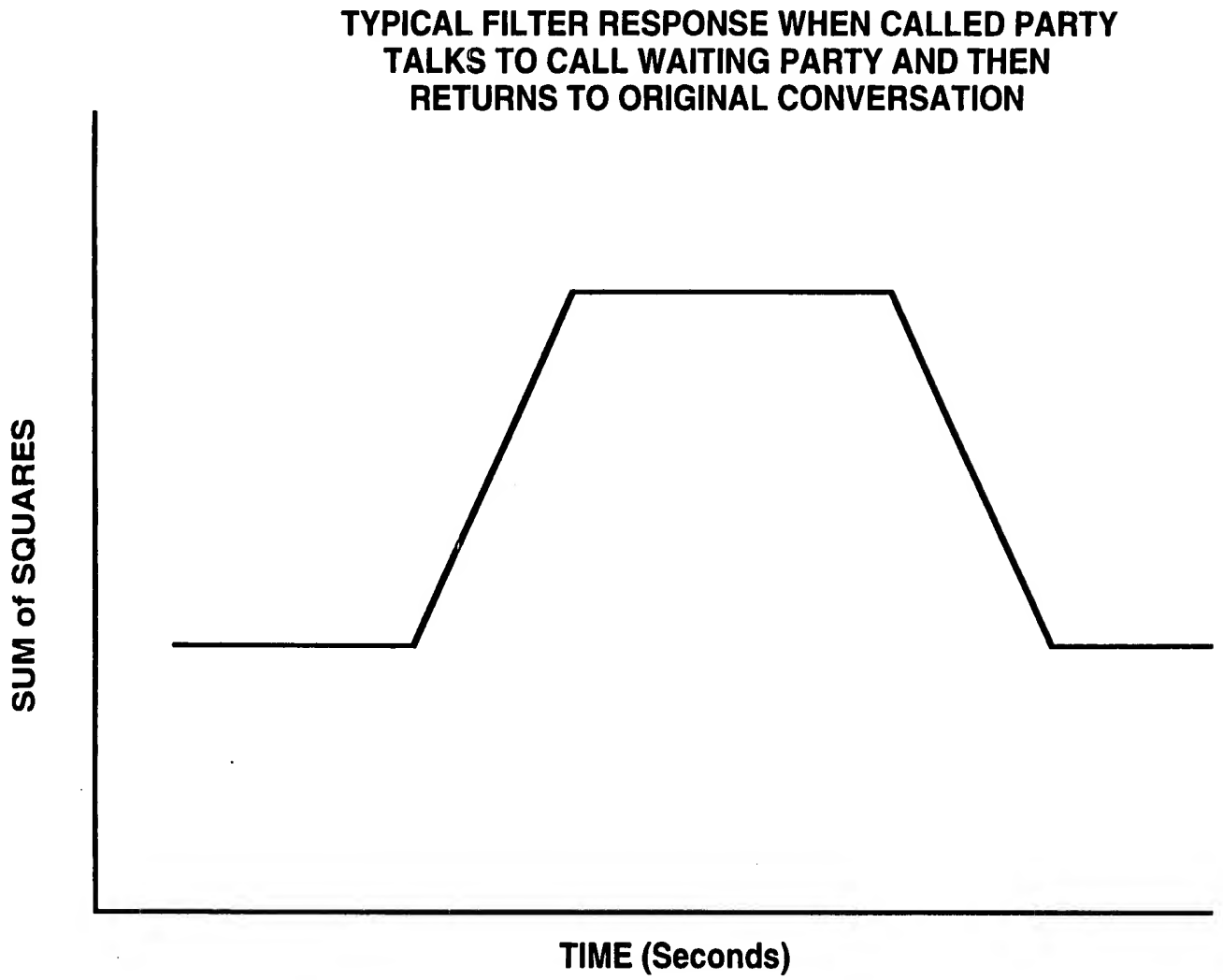
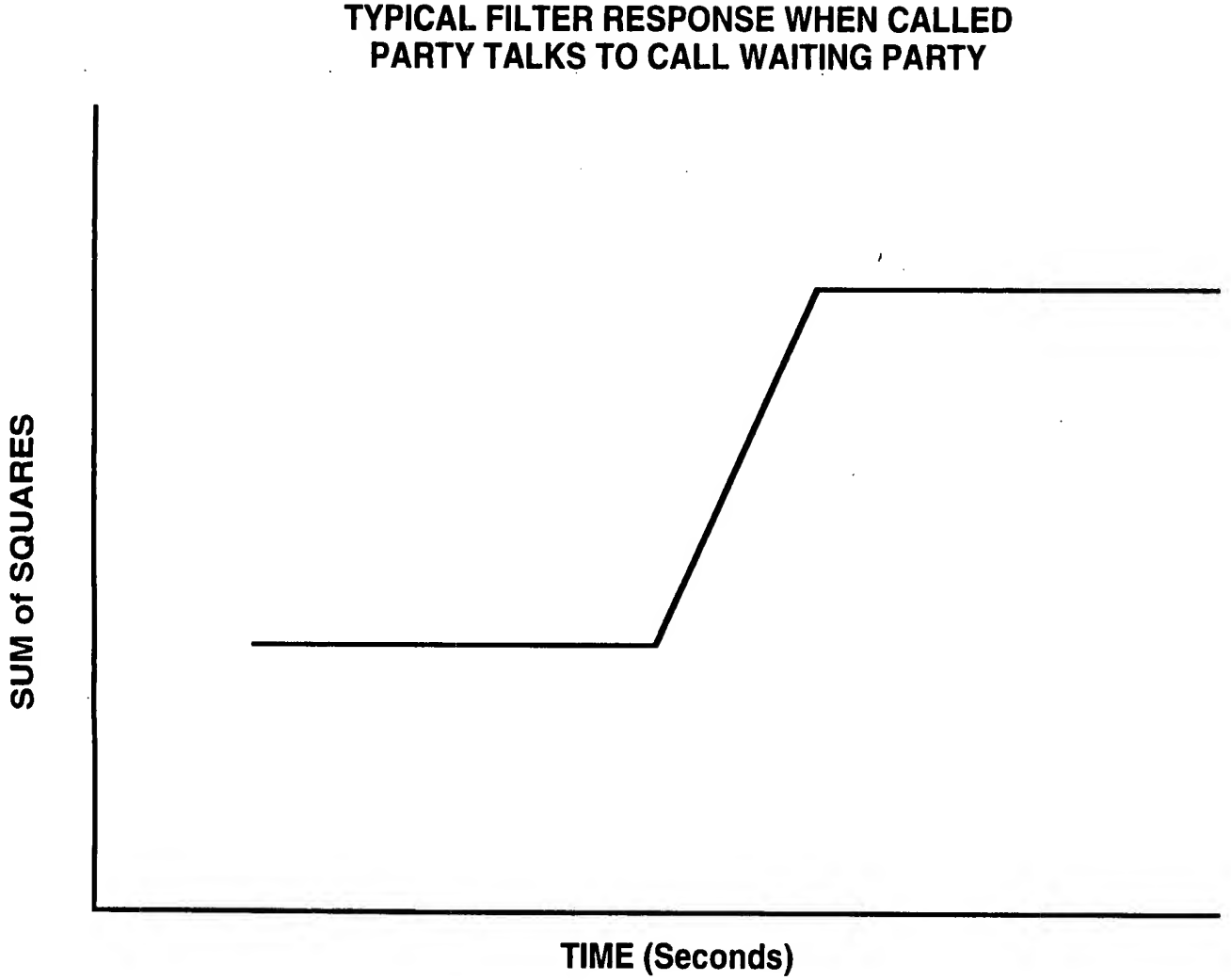

TYPICAL FILTER RESPONSE WHEN CALLED PARTY
TALKS TO CALL WAITING PARTY AND THEN
RETURNS TO ORIGINAL CONVERSATION
SUM of SQUARES
TIME (Seconds)

Figure 2D


TYPICAL FILTER RESPONSE WHEN CALLED PARTY TALKS TO CALL WAITING PARTY
SUM of SQUARES
TIME (Seconds)

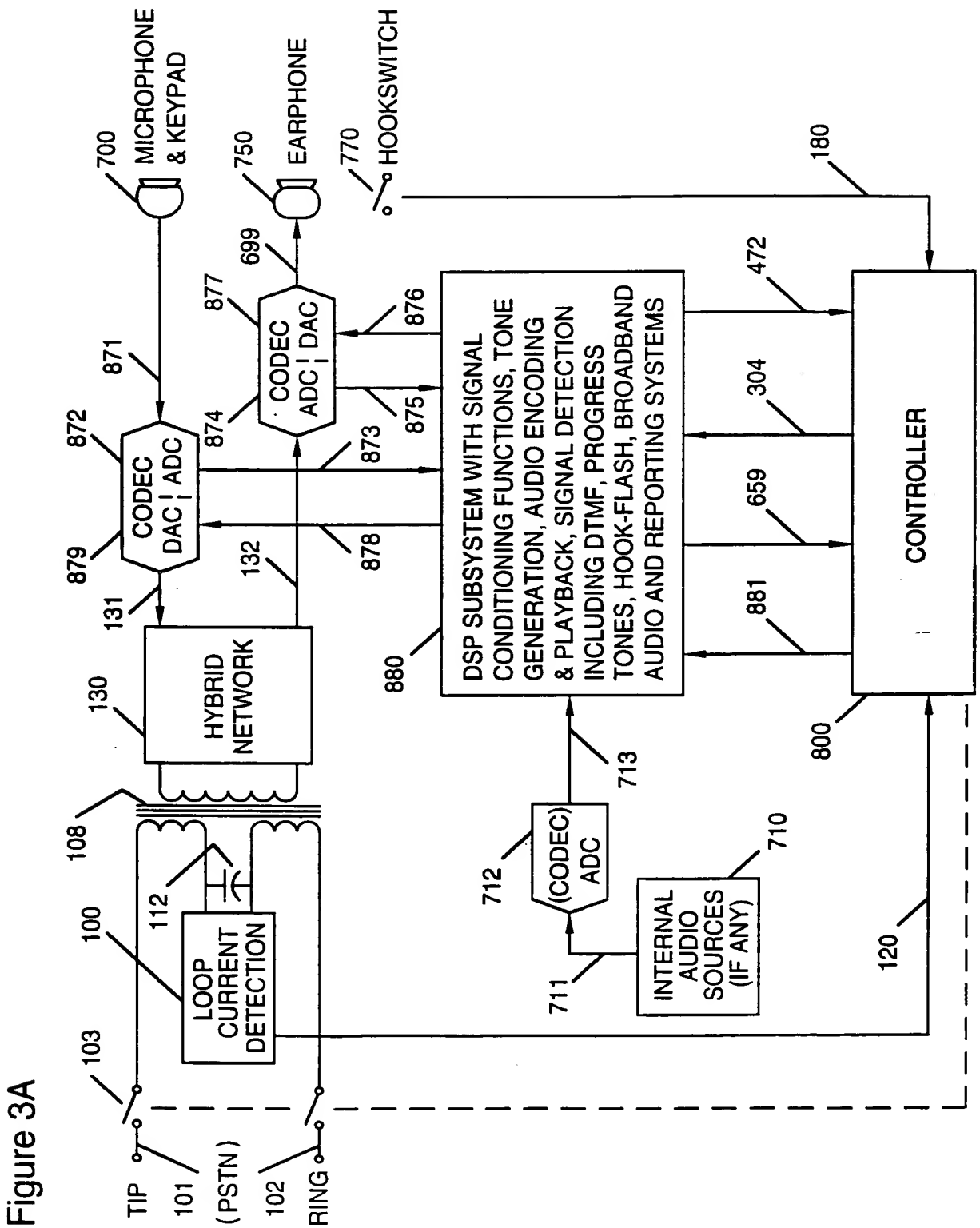

TIP
101
(PSTN)
102
RING
103
LOOP CURRENT DETECTION
100
112
108
HYBRID NETWORK
130
131
132
CODEC ADC | DAC
872
871
879
CODEC ADC | DAC
877
874
876
875
873
878
699
700
MICROPHONE & KEYPAD
750
EARPHONE
770
HOOKSWITCH
180
DSP SUBSYSTEM WITH SIGNAL CONDITIONING FUNCTIONS, TONE GENERATION, AUDIO ENCODING & PLAYBACK, SIGNAL DETECTION INCLUDING DTMF, PROGRESS TONES, HOOK-FLASH, BROADBAND AUDIO AND REPORTING SYSTEMS
880
472
304
659
881
CONTROLLER
800
713
(CODEC) ADC
712
INTERNAL AUDIO SOURCES (IF ANY)
711
710
120

Figure 3A

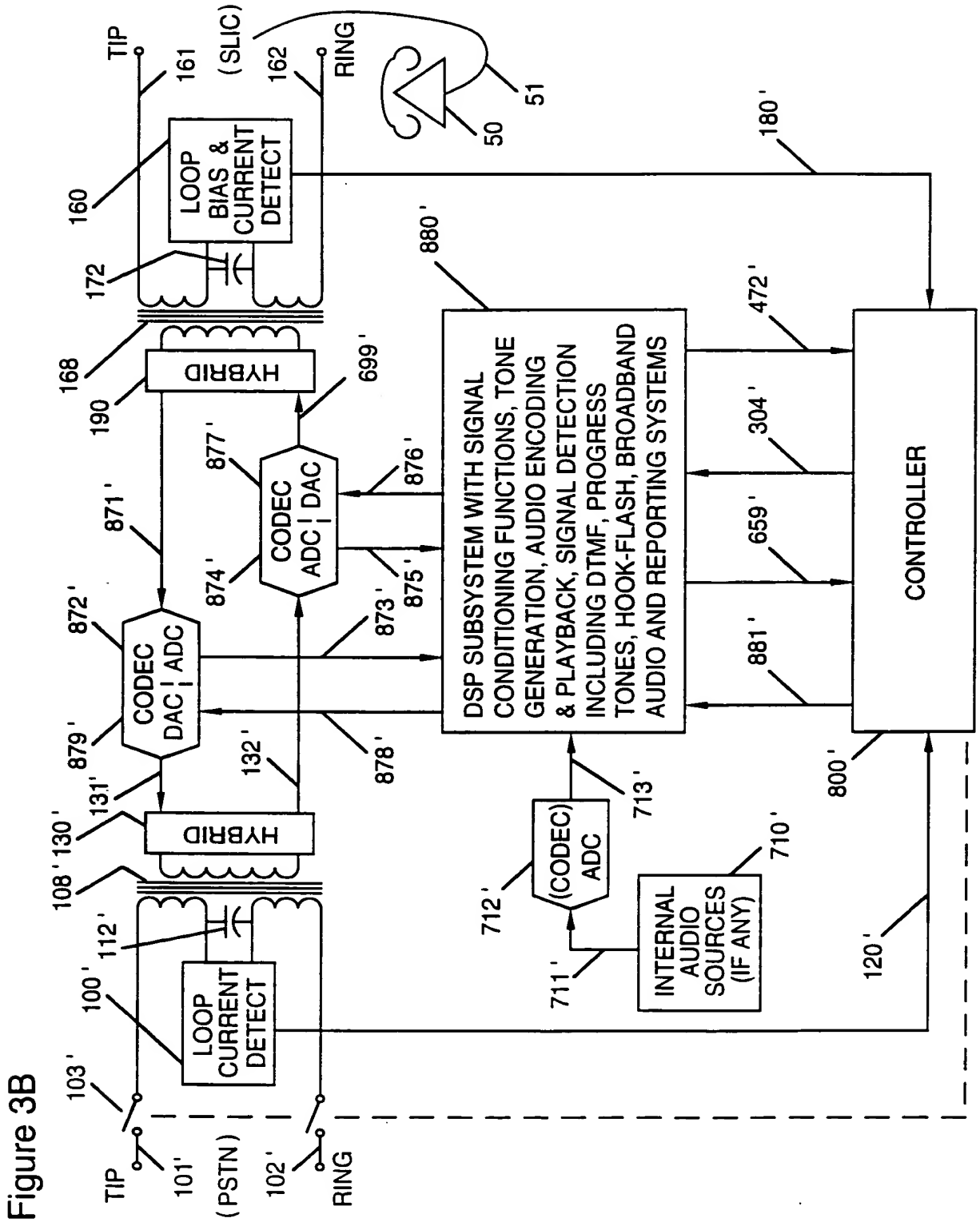
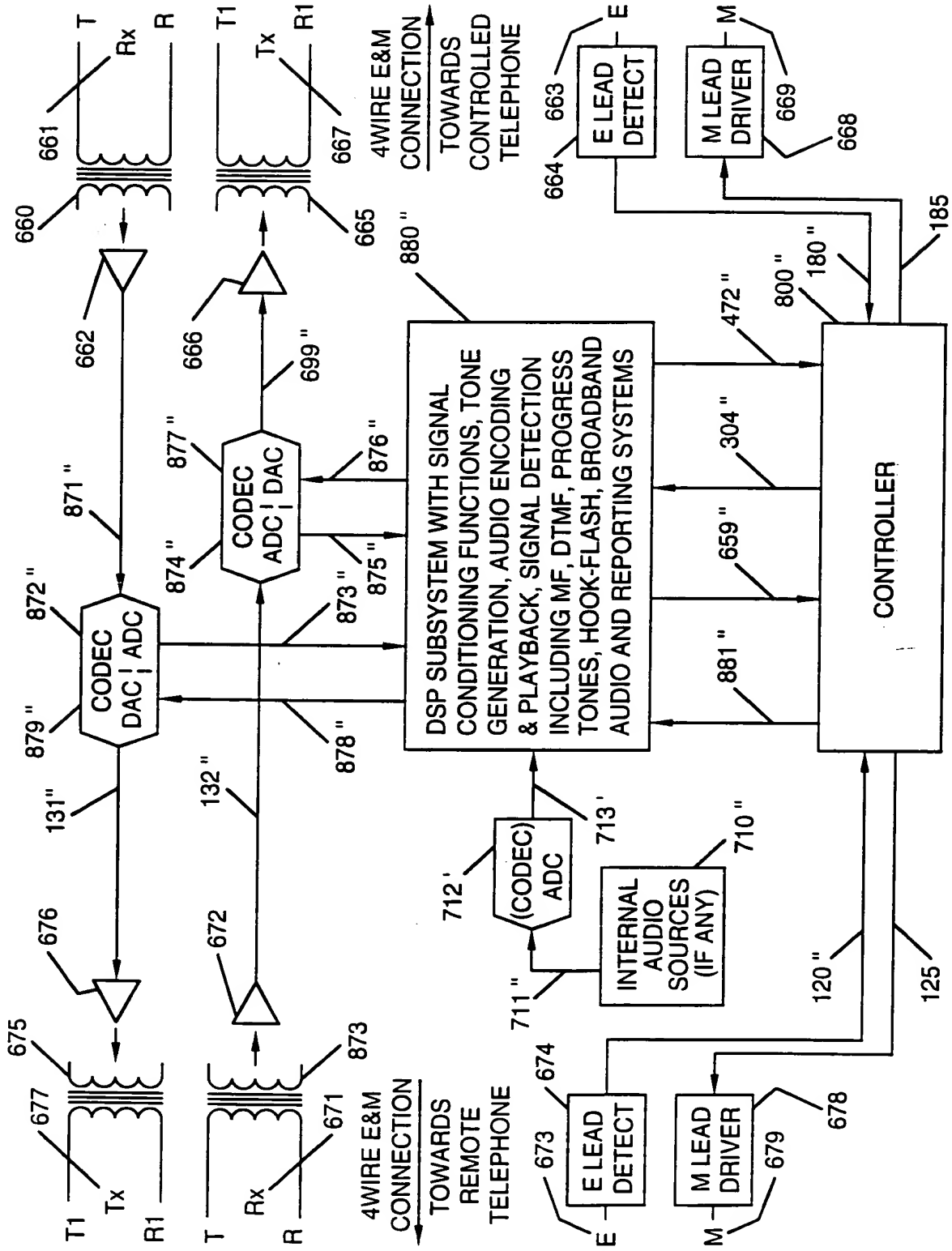

TIP
101'
(PSTN)
102'
RING
103'
LOOP CURRENT DETECT
100'
112'
108'
130'
HYBRID
131'
132'
CODEC DAC ADC
879'
872'
871'
CODEC ADC DAC
874'
877'
876'
875'
873'
878'
699'
HYBRID
190
168
LOOP BIAS & CURRENT DETECT
172
160
TIP
161
(SLIC)
162
RING
50
51
180'
880'
DSP SUBSYSTEM WITH SIGNAL CONDITIONING FUNCTIONS, TONE GENERATION, AUDIO ENCODING & PLAYBACK, SIGNAL DETECTION INCLUDING DTMF, PROGRESS TONES, HOOK-FLASH, BROADBAND AUDIO AND REPORTING SYSTEMS
472'
304'
659'
881'
CONTROLLER
800'
120'
(CODEC) ADC
712'
713'
711'
INTERNAL AUDIO SOURCES (IF ANY)
710'

Figure 3B

WO 00/65560 PCT/US00/09650

Figure 3C



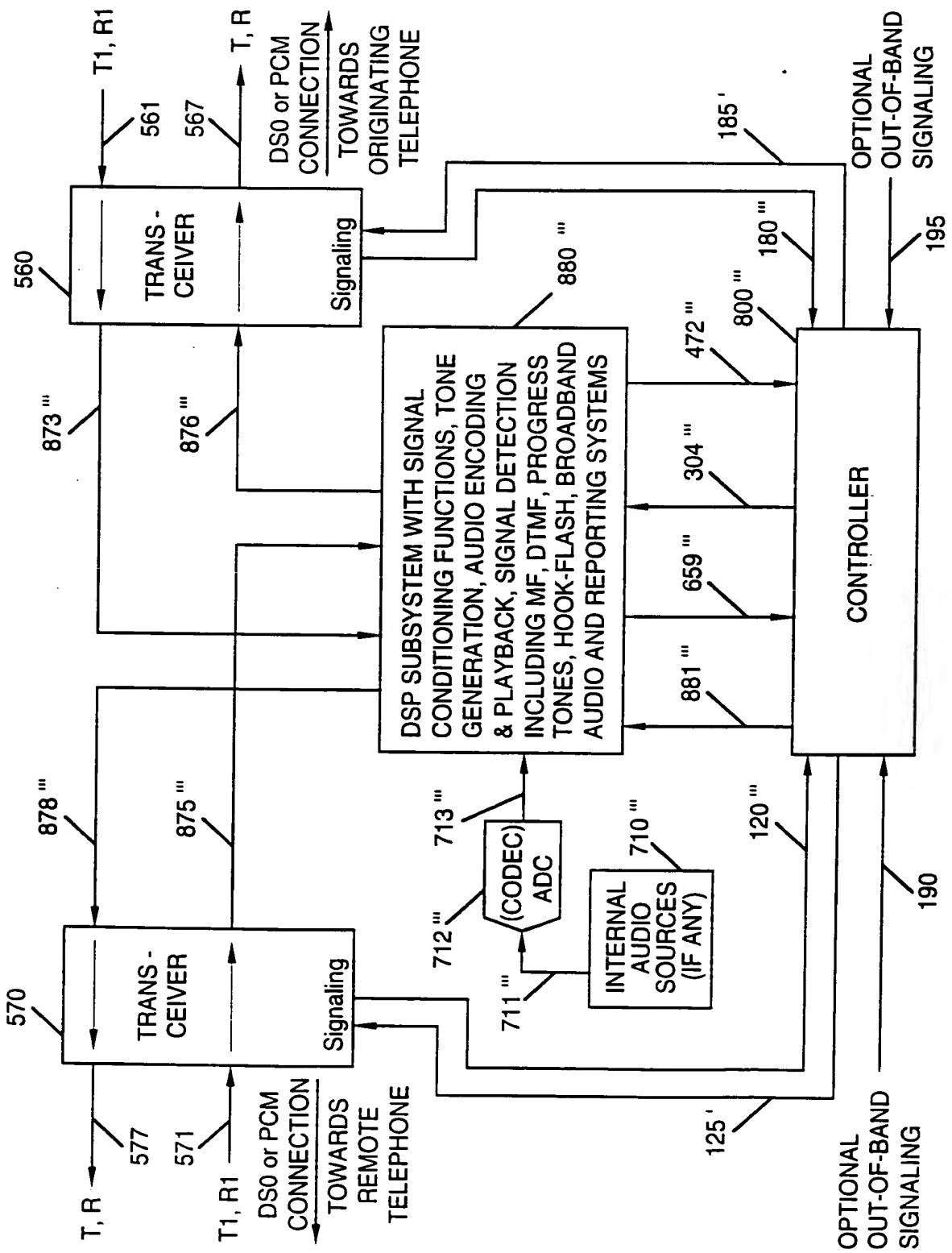

T1, R1
561
567
T, R
DS0 or PCM CONNECTION
TOWARDS ORIGINATING TELEPHONE
560
TRANS-CEIVER
Signaling
185'
OPTIONAL OUT-OF-BAND SIGNALING
195
180'''
800'''
880'''
472'''
873'''
876'''
DSP SUBSYSTEM WITH SIGNAL CONDITIONING FUNCTIONS, TONE GENERATION, AUDIO ENCODING & PLAYBACK, SIGNAL DETECTION INCLUDING MF, DTMF, PROGRESS TONES, HOOK-FLASH, BROADBAND AUDIO AND REPORTING SYSTEMS
304'''
659'''
881'''
CONTROLLER
878'''
875'''
713'''
(CODEC) ADC
712'''
710'''
INTERNAL AUDIO SOURCES (IF ANY)
711'''
120'''
190
570
TRANS-CEIVER
Signaling
577
571
T, R
T1, R1
DS0 or PCM CONNECTION
TOWARDS REMOTE TELEPHONE
125'
OPTIONAL OUT-OF-BAND SIGNALING

Figure 3D

Figure 4A

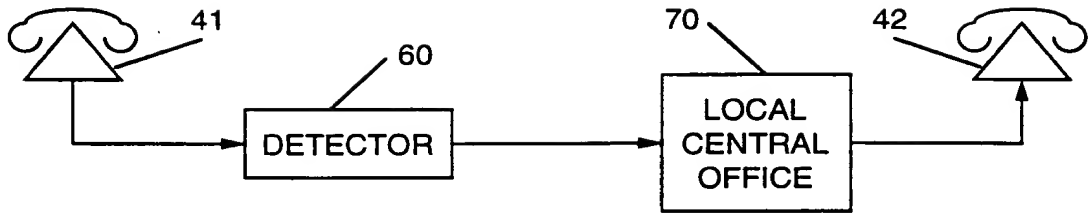


Figure 4B

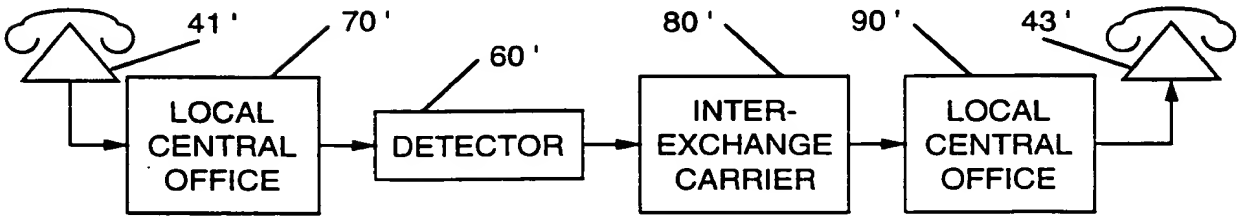


Figure 4C

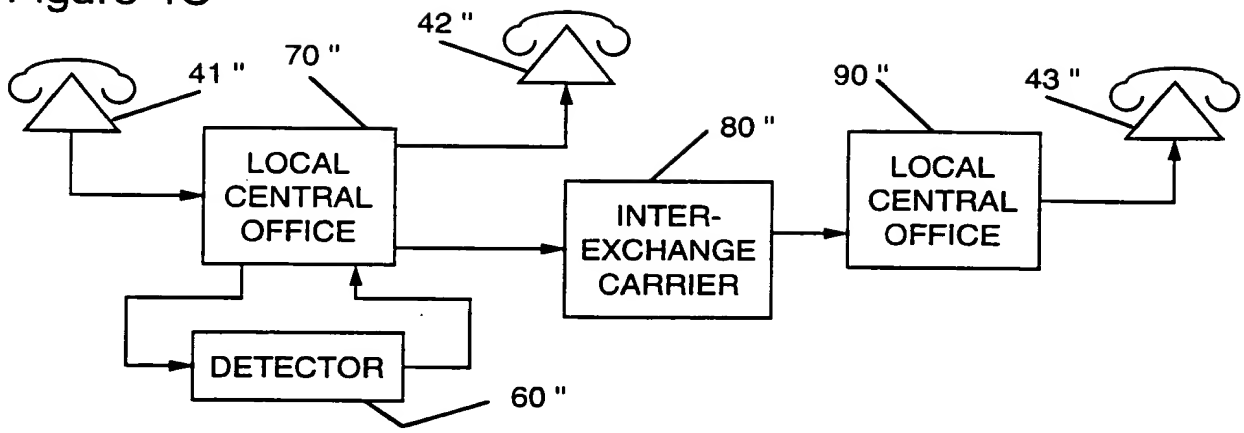


Figure 4D

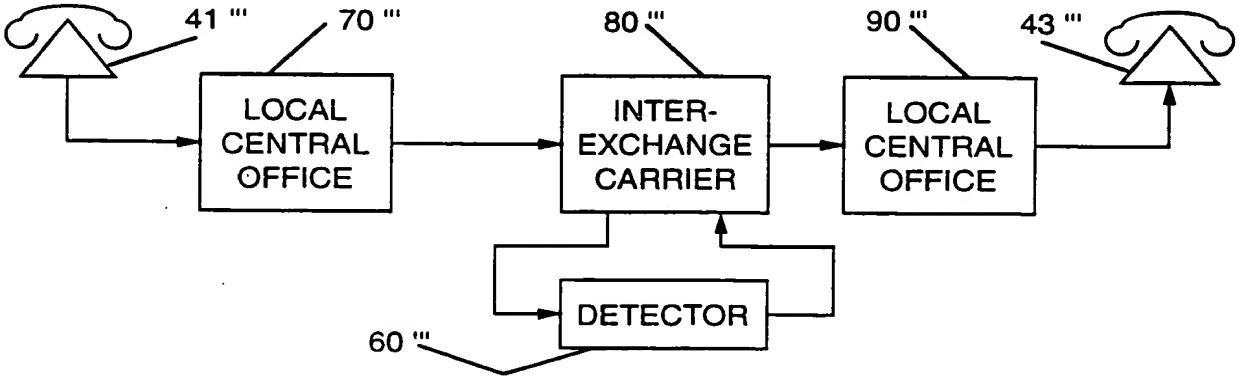
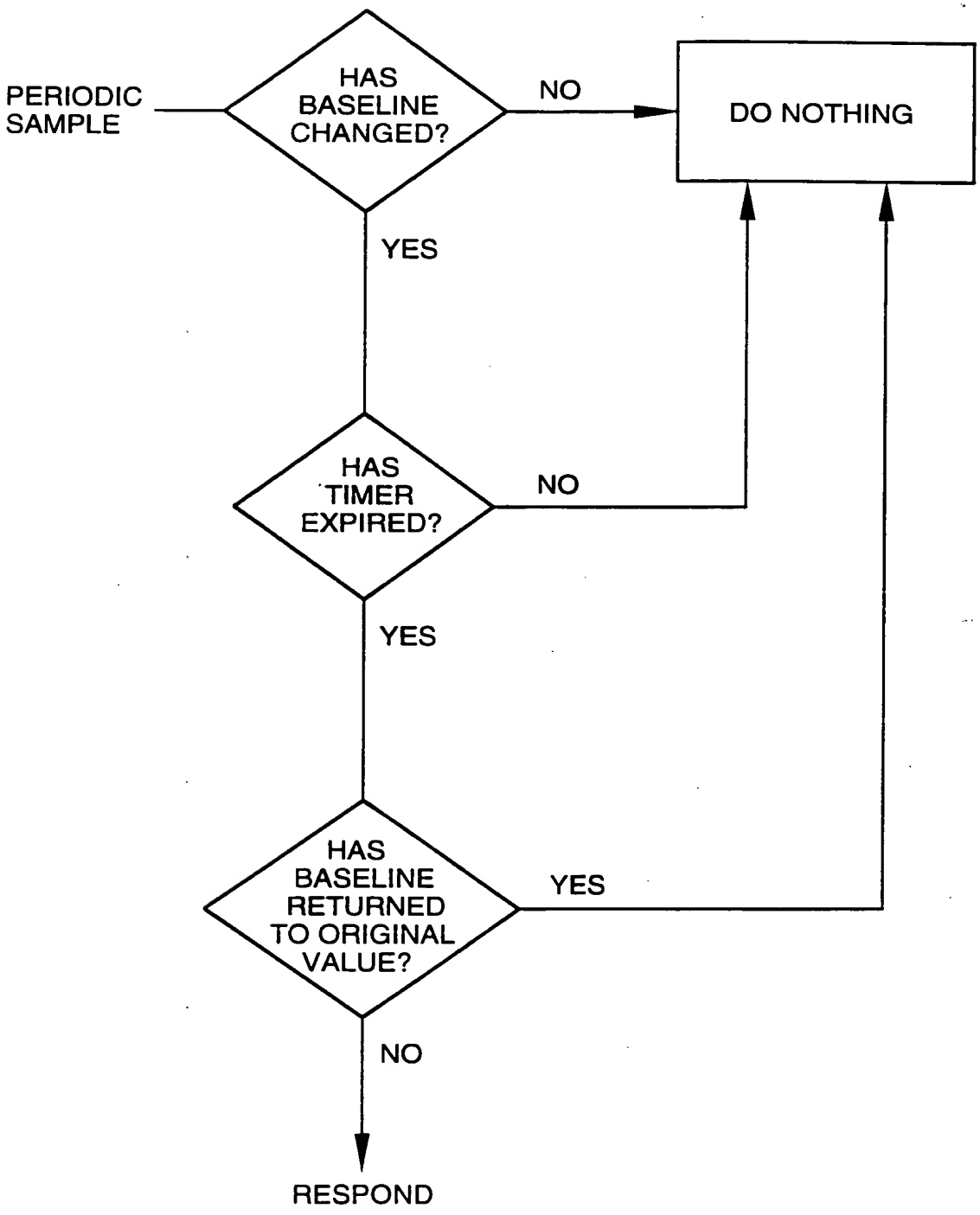


Figure 5



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